

Sub A1

What is claimed is:

1. An electric keyboard assembly comprising:
5 a plurality of keys that are each pivotally moved by
a key depressing operation; and

10 a plurality of seesaw-type mass members that each have
first and second arms extending in opposite directions from
a pivotal center of the mass, and a follower arranged on
said first arm, said mass members being disposed in a manner
associated with said plurality of keys, respectively, and
each pivotally moved about said pivotal center by a driving
force generated by depression of a corresponding one of said
15 plurality of keys and received via said follower, said first
arm of said mass member popping up to a level higher than
said corresponding key when said corresponding key is
depressed; and

20 a plurality of weight members that are disposed
separately in said first arm and in said second arm,
respectively, and

25 wherein a distance between said pivotal center and said
weight member disposed in said first arm is set to a smaller
value than a distance between said pivotal center and said
weight member disposed in said second arm.

2. An electric keyboard assembly comprising:

25 a plurality of white keys that are each pivotally moved
by a key depressing operation;

30 a plurality of black keys that are each pivotally moved
by a key depressing operation;

35 a plurality of seesaw-type mass members that each have
a first arm and a second arm each extending from a pivotal
center of the mass member, said plurality of mass members
being disposed in a manner associated with said plurality
of white keys and black keys, respectively, and being each
pivotally moved about said pivotal center when a
corresponding one of said plurality of white keys or black

Alt
act

keys is depressed, said plurality of mass members each having a resin portion, said resin portion of one of said mass members associated with one of said white keys being substantially identical in configuration with said resin portion of another of said mass members associated with one of said black keys which is adjacent to said one of said white keys; and

5 a plurality of insert weight members that are arranged respectively in said first and second arms of each of said mass members, and

10 wherein said insert weight members have respective weights thereof set separately from each other, whereby key-touch responses of said one of said white keys and said one of said black keys adjacent thereto are made similar 15 to each other.

3. An electric keyboard assembly comprising:

20 a plurality of keys that are each pivotally moved by a key depressing operation;

25 a plurality of mass members that each have a body, and are disposed in a manner associated with said plurality of keys, respectively, said plurality of mass members being each pivotally moved about a pivotal center thereof when a corresponding one of said plurality of keys is depressed, said body of each of said plurality of mass members being formed of resin and having at least one hollow weight-mounting portion formed therein; and

30 at least one weight member that is mounted in said at least one hollow weight-mounting portion, said at least one weight member each having a hollow portion formed therein, and

35 wherein said hollow portion of said at least one weight member of each of said plurality of mass members having a volumetric capacity thereof set separately from each other so as to accomplish key scaling to key-touch response.

4. An electric keyboard assembly comprising:

Alt
(alt)

a plurality of keys that are each pivotally moved by a key depressing operation;

5 a plurality of seesaw-type mass members that each have a body, and first and second arms extending in opposite directions from a pivotal center thereof, said plurality of mass members being disposed in a manner associated with said plurality of keys, respectively, said plurality of mass members being each pivotally moved about said pivotal center when a corresponding one of said plurality of keys is depressed, said body of each of said plurality of mass members being formed of resin, said body including a follower for receiving a driving force generated by said key depressing operation, a stopper abutment portion for abutment with a stopper for setting a pivotal movement-completing position of said mass member, and a sensor depressing portion for depressing a sensor for detecting said key depressing operation, each of said plurality of mass members having first and second weight-mounting portions formed in said first and second arms, respectively; and

20 first and second insert weight members that are mounted in said first and second weight-mounting portions, respectively, and

25 wherein said follower, said stopper abutment portion, and said sensor depressing portion each have an identical configuration between ones of said plurality of mass members for a plurality of octave sections; and

30 wherein a plurality of combinations of weights of said first and second insert weight members to be mounted in said first and second arms, respectively, can be set between said ones of said plurality of mass members for said plurality of octave sections, while maintaining ease of operation of mounting said first and second insert weight members in a corresponding one of said plurality of mass members.

35 5. An electric keyboard assembly according to claim

4, wherein said first and second insert weight members each have an outer periphery and are formed of a sheet member, said outer periphery being configured such that it can be fitted in a corresponding one of said first and second weight-mounting portions of each of said plurality of mass members, and wherein said plurality of combinations of weights of said first and second insert weight members to be mounted in said first and second arms, respectively, can be set by at least one of changing weights of said first and second insert weight members and changing thickness of said first and second insert weight members, while maintaining said outer periphery identical in configuration between said first and second insert weight members.

5 6. A keyboard assembly comprising:

10 a plurality of pivotally movable members that each have a pivotally movable member body and are each pivotally moved by a key depressing operation; and

15 a plurality of weight members each having an outer periphery and mounted in said plurality of pivotally movable members;

20 wherein said weight members mounted in said plurality of pivotally movable members are different in weight from each other so as to vary key-touch response between said keys or between groups of said keys during key depression, thereby accomplishing key scaling to key-touch response;

25 at least one of said weight members being formed of a plurality of weight component parts laminated one upon another and fixed together;

30 said plurality of weight component parts having a substantially identical outer shape in plan view;

35 said pivotally movable members being formed by outsert molding;

35 said outer periphery of each of said weight members being covered by resin outserted thereon;

35 said pivotally movable member body comprising an

Alt
outserted portion covering said outer periphery of each of said weight members;

5 said weight members mounted in said pivotally movable members being different in weight between said keys or between key ranges.

10 7. A method of manufacturing a weight member mounted in a pivotally movable member provided in a keyboard assembly, said weight member comprising a plurality of weight component parts laminated one upon another, the method comprising the steps of:

15 intermittently moving a sheet member formed of a metal, and forming half-punched portions each having a projection on one side surface of said sheet member and a recess on an opposite side surface thereof, during stoppage of intermittent movement of said sheet member;

20 punching, using a cavity blade, a portion of said sheet member along an outer periphery thereof which is located radially outward of said half-punched portions to form each of said weight component parts having said half-punched portions, and sequentially laminating the formed weight component parts one upon another within said cavity blade such that the recesses or projections of the half-punched portions of an leading one of the weight component parts are fitted with the projections or recesses of the half-punched portions of a following one of the weight component parts; and

25 30 removing said weight member formed of a predetermined number of said weight component parts laminated one upon another from said cavity blade when said predetermined number of said weight component parts are laminated one upon another.

8. A method according to claim 7, wherein said plurality of weight component parts have a substantially identical outer shape in plan view.